STOEL RIVES LLP
ATTORNEYS AT LAW

980 Ninth Street, Suite 1900
Sacramento, California 95814
main 916.447.0700
fax 916.447.4781
www.stoel.com

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JOHN A. MCKINSEY
Direct (916) 319-4746
jamckinsey@stoel.com

BY HAND DELIVERY

J. Mike Monasmith
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Re: Carlsbad Energy Center Project (07-AFC-6)
Applicant's Comments to Preliminary Staff Assessment

Dear Mr. Monasmith:

On December 11, 2008, the California Energy Commission (CEC) Staff published its Preliminary Staff Assessment (PSA) for the Carlsbad Energy Center Project (CECP or the Project). Staff requested comments in writing no later than January 30, 2009. To that end, Carlsbad Energy Center LLC (Applicant) hereby provides the following comments to Staff's PSA.

Applicant generally finds the proposed Conditions of Certification to be acceptable and appropriate and more than sufficient to ensure that CECP will be constructed and operated to be a positive contribution to the community and the environment. As was generally discussed at the two-day workshop on January 7 and 8, 2009, Applicant has a few very specific comments or suggestions to Staff regarding the PSA, which are provided in more detail below.

Concurrent with these comments, Applicant has prepared and is submitting the required status report. In that status report, Applicant notes the importance of continuing to promptly advance this Project toward a final decision. As noted in this document and in the status report, there are no notable issues or reasons that require Staff to delay issuance of its Final Staff Assessment (FSA). CECP clearly can be constructed and operated in compliance with all applicable Laws Ordinances, Regulations, and Standards (LORS) and without having any significant unmitigated effects on the environment.

I. PROJECT DESCRIPTION COMMENTS

Applicant has reviewed the Project Description prepared by Staff in the PSA for CECP ("Project Description"). While we find the Project Description to be, for the most part, consistent with the Project as proposed by Applicant, it is important to note several issues that need to be resolved by Staff in the FSA.

First, while the Project Description section of the PSA mentions the use of California Title 22 (Title 22) reclaimed water to provide the industrial water required by various components of CECP as an option, along with the use of ocean water for the same processes (see PSA pages 3-3, 3-4), various PSA sections are silent regarding the use and disposal of reclaimed water as an option for CECP. In addition, certain other PSA sections explicitly note that the reclaimed water is not analyzed in the PSA. (*See, e.g.*, Soil and Water Resources at 4.9-5). As discussed and analyzed in the Project Enhancement and Refinement document (PEAR), CECP includes a provision for an alternative industrial water supply and includes industrial wastewater discharge methods to resolve concerns raised by the City of Carlsbad (City) that the City lacks an adequate capacity of Title 22 reclaimed water. As also discussed and analyzed in the PEAR, CECP includes an ocean-water purification system (reverse osmosis) as an alternative to Title 22 reclaimed water as the source of industrial water for CECP. In addition, an alternative wastewater discharge path through the existing Encina Power Station (EPS) ocean-water discharge system is included in the Project as well as the plan to discharge CECP industrial wastewater through the City system. These alternatives resolve any reliability issues related to the City's position that it has insufficient quantities of Title 22 reclaimed water to meet the industrial water needs of CECP, and the City's position that it does not have sufficient capacity for CECP to discharge industrial wastewater to the City's existing sanitary/industrial sewer system. However, as noted in the PEAR, should the City and Applicant reach an agreement for the City to provide sufficient quantities of Title 22 reclaimed water and an agreement for the City to accept industrial wastewater in the City's existing sanitary/industrial wastewater sewer in time to allow engineering and construction to support the commercial online date for CECP, then the originally proposed water supply and discharge methods in the AFC will be available to be used by Applicant.

Through the information and analysis provided in the AFC and the PEAR that addresses both water sources and both wastewater discharge methods, the FSA should analyze and address both water sources and wastewater discharge methods. Further, appropriate Conditions of Certifications should be included in the FSA to allow Applicant to use either water source and either wastewater discharge method. There is sufficient information provided in the AFC and PEAR, and through Staff Data Requests, for Staff to analyze both in the FSA.

In addition to optional sources of water and optional methods for wastewater discharge not being included in the Project Description of the PSA, various technical sections of the PSA also did not include these options. Applicant requests that Staff include the appropriate analysis in the FSA. Below, applicant provides specific comments for each section that requires adjustment to its analysis.

In addition to the above, some sections of the PSA, as such relate to the environmental effects of the new SDG&E 230kV switchyard, appear to be inconsistent. Specifically, it is important CEC TSE staff has a firm understanding of the new SDG&E 230kV switchyard, and the new switchyard does appear to be expressly addressed in the Visual Resources section of the PSA. Applicant requests that the appropriate analysis of the new SDG&E 230kV switchyard be included in the FSA.

The following sections provide Applicant's specific input and comments on the technical sections of the PSA.

II. ENVIRONMENTAL ASSESSMENT COMMENTS

Air Quality Section Comments

While Applicant does not agree with the Staff's basic finding in the PSA regarding air quality that there are three unresolved issues, Applicant does agree that when these issues are resolved that the Project will comply with all applicable LORS and that the Project will not result in significant air quality impacts.

Based on the discussion with Staff at the PSA Workshop on January 7, 2009, Applicant provides the following information regarding the Project's air quality mitigation package and also provides appropriate revisions to the Air Quality Conditions of Certifications proposed by Staff in the PSA to address Staff's concerns.

Air Quality Mitigation Package

In the PSA (CECP PSA, page 4.1-43), the Staff discussed the need for Applicant to finalize an air quality mitigation package for the proposed Project that addresses the need to obtain mitigation for the net emission increases of PM_{10} and VOC. Staff recommended the following mitigation options:

- ERCs from the SDAPCD bank that are currently owned by Applicant;
- ERCs from the SDAPCD bank to be obtained by Applicant;
- Create emission reductions from the site, such as shutting down the existing peaking gas turbine; and,
- Create emission reductions from third party sources, which could be accomplished by funding the Carl Moyer Program or a similar emission reduction program specific to the proposed Project.

To mitigate the net emission increases of PM_{10} and VOC for CECP, Applicant will follow the following two approaches recommended by the Staff.

First, for purposes of PM_{10} mitigation, prior to the initial operation of the first gas turbine, Applicant will surrender approximately 2.9 tons/year of PM_{10} SDAPCD banked ERCs, currently owned by Applicant to mitigate the net emission increase of approximately 7.5 tons/year. The remaining PM_{10} mitigation will be obtained by Applicant funding an air quality mitigation program with the SDAPCD using the guidelines developed by CARB for the Carl Moyer Program and following a similar program to that required of the Chula Vista Upgrade Project in Condition of Certification AQ-SC6 in the FSA for that project. As a backup optional approach to mitigating the remaining PM_{10}, Applicant would be willing to surrender approximately 8.8 tons/year of SOx SDAPCD banked ERCs currently owned by Applicant to mitigate PM_{10}.

For purposes of VOC mitigation, Applicant will use the same approach as discussed above and fund an air quality mitigation program with SDAPCD to mitigate the VOC net emission increase of approximately 9.3 tons/year. The form of the arrangement will be the same as that proposed above for the PM_{10} mitigation using the Chula Vista Upgrade Project COC AQ-SC6 guideline.

Second, with respect to NOx mitigation, it is Applicant understands that the SDAPCD will not issue the Final Determination of Compliance (FDOC) for the proposed Project until a NOx ERC summary is submitted to the SDAPCD. This NOx ERC summary must identify the NOx ERCs currently owned by Applicant (including the ERC certificate number and amount). If there are any remaining NOx ERCs that must be purchased to meet the total NOx ERC amount of 47.82 tons/year required by PDOC Condition 15 (and reflected in PSA Condition of Certification AQ-15), Applicant will sign an agreement with an ERC holder for the remaining amount of NOx ERCs. A copy of this agreement will be submitted to the SDAPCD and the CEC as part of the ERC summary package.

PSA Condition of Certification AQ-5

This Condition of Certification reflects the SDAPCD's PDOC Condition Number 5, which requires that the appropriate amount of NOx emission reduction credits (ERCs) for each gas turbine is surrendered to the SDAPCD prior to the initial operation of each gas turbine. During the PSA workshop on January 7, 2009, air quality staff requested that the full amount of the required NOx ERCs for both gas turbines be surrendered prior to the initial operation of the first gas turbine. During this workshop, Applicant agreed to this change and Applicant's markup of PSA Condition AQ-5 reflects this agreed upon change (see section below entitled **Requested Changes to PSA Air Quality Conditions of Certification**).

PSA Condition of Certification AQ-10

This Condition of Certification reflects the SDAPCD's PDOC Condition Number 5, which defines the gas turbine shutdown period. In a January 5, 2009 letter to the SDAPCD, Applicant requested that this PDOC condition be revised by replacing a specific gas low load gas turbine MW level with the initiation of a shutdown sequence. This change was requested to avoid the complications associated with different low load MW levels occurring depending on ambient conditions. Applicant is requesting this same change to this PSA Condition of Certification.

PSA Condition of Certification AQ-15

This Condition of Certification reflects the SDAPCD's PDOC Condition Number 15, which defines a transient hour. In a January 5, 2009 letter to the SDAPCD, Applicant requested that the ramp rate in this PDOC condition be changed from 50 to 10 MW/min to define a transient hour. This request was made based on based on information provided by Siemens that there can be elevated gas turbine NOx emission levels (as high as 13 ppmv @ 15% O_2 prior to SCR) during transient gas turbine load changes with ramp rates as low as 5 MW/min and with possibly higher NOx concentrations for ramp rates above that level. In addition, in the January 5, 2009 letter Applicant requested that NOx emissions during transient conditions be excluded from the calculation of hourly NOx concentrations subject to the 2.0 ppm BACT limit. This request was made because with the 3-hour average calculation approach in the current PDOC condition, just one 15-minute period with NOx levels at approximately 6 ppmv could result in an exceedance of the NOx emission limit. Finally, in the January 5, 2009 letter Applicant requested that additional language regarding exemptions from the NOx limit of 2.0 ppm during transient operation that results from some specific operating conditions such as rapid gas turbine load changes due to the initiation of Automatic Generation Control by the California ISO.

When this PSA Condition of Certification was discussed during the PSA workshop on January 7, 2009, the CEC air quality staff asked that Applicant recommend draft language that more clearly links the transient hour definition in the PDOC/PSA condition with the requested NOx exemption due to transient operation necessitated by specific operating conditions. The enclosed requested changes to this condition were made to clarify the link between the transient hour and the specific operating conditions.

In a recent data request from the Staff (Air Quality Data Request Set 4 issued on January 22, 2009), the Staff asks several questions regarding transient load changes. While Applicant will provide a more detailed response to these data requests in a separate data response submittal to the CEC, the following are brief responses to some of these questions.

- A few of Staff's data requests questioned whether the facility can meet the California Independent System Operator's (CAISO) operating requirements and also meet SDAPCD permit limits. The short answer to this question is yes, CECP will be able to meet both CAISO operating requirements and the SDAPCD permit limits. With regard to ramp rates, the CAISO operating requirements were specific to operational capability during a singular short-term event lasting only a few minutes as opposed to maintaining this ramp rate during ongoing cyclic operation of the plant that could occur over a prolonged period.
- A few of Staff's data requests were regarding the NOx excursion language specific to some of the qualifying facility operating conditions. As discussed in Applicant's January 5, 2009 PDOC comment letter, the requested NOx excursion language for specific transient operations was based on similar language, previously approved by the CEC for other power plant projects. Similar NOx excursion language can be found in the Final Commission Decisions for the following power plants:
  - Cosumnes Power Plant (01-AFC-19, COC AQ-26);
  - East Altamont Energy Center Power Plant (01-AFC-4, COC AQ-25i);
  - Inland Empire Energy Center (01-AFC-17, COC AQ-22);
  - Los Esteros 2 Power Plant (03-AFC-2, COC AQ-19g);
  - Los Medanos District Energy Facility Project (98-AFC-1, COC AQ-22);
  - Moss Landing Power Plant (99-AFC-4, COC AQ-18);
  - Pastoria Energy Facility Expansion Project (05-AFC-01, COC AQ-33);
  - San Joaquin Valley Energy Center (01-AFC-22, COC AQ-34);
  - Donald Von Raesfeld Power Plant (02-AFC-3, COC AQ-20); and
  - Walnut Energy Center Project (02-AFC-4, COC AQ-21).

PSA Condition of Certification AQ-19

This Condition of Certification reflects the SDAPCD's PDOC Condition Number 19. In the enclosed markup of the PSA Conditions of Certification, Applicant requests that the reference to Turbine A be changed to Turbine B (this appears to be a typographical error in the PDOC condition).

PSA Conditions of Certification AQ-23 and AQ-62

These Conditions of Certification reflect the requirements of SDAPCD's PDOC Condition Numbers 23 and 62. These permit conditions require daily sampling of the natural gas sulfur content. As discussed in the January 5, 2009 letter to the SDAPCD, Applicant requests that this daily sampling be removed since it is not required to show compliance with PDOC conditions or application requirements under the NSPS and/or Acid Rain regulations. The enclosed markup of the air quality Conditions of Certification shows the requested change.

PSA Conditions of Certification AQ-28, AQ-29, and AQ-30

These Conditions of Certification reflect the requirements of SDAPCD's PDOC Condition Numbers 28, 29, and 30. As discussed in the requested change for Condition of Certification AQ-15, Applicant requests the calculation of hourly average NOx concentrations for compliance with BACT ppm limits exclude minutes during transient operation. Since Applicant expects similar spikes in CO and VOC concentrations during transient operation, Applicant requests the same exclusion for the calculation of hourly CO and VOC concentrations during transient operation. These same requests were made in Applicant's January 5, 2009 letter to the SDAPCD. The enclosed markup of the air quality Conditions of Certification shows the requested changes.

PSA Condition of Certification AQ-54

This Condition of Certification reflects the requirements of SDAPCD PDOC Condition Number 54. As discussed in Applicant's January 5, 2009 letter to the SDAPCD, for consistency purposes Applicant requests the submittal deadline for source test and RATA reports be changed from 45 days to 60 days following the completion of the test. The enclosed markup of the air quality Conditions of Certification shows the requested change.

PSA Condition of Certification AQ-63

This Condition of Certification reflects the requirements of SDAPCD PDOC Condition Number 63. As discussed in Applicant's January 5, 2009 letter to the SDAPCD, Applicant requests that this condition be changed to clarify that the Project owner must comply with all applicable monitoring requirements in 40 CFR 75 rather than comply with all monitoring requirements in this regulation. The enclosed markup of the air quality Conditions of Certification shows the requested change.

PSA Condition of Certification AQ-66

This Condition of Certification reflects the requirements of SDAPCD PDOC Condition Number 66. As discussed in Applicant's January 5, 2009 letter to the SDAPCD, Applicant requests that the definition for commercial operation be changed from when power is first sold to the grid to when a gas turbine successfully completes all performance/ emission compliance tests. If left unchanged, this Condition of Certification could require the RATAs to be performed prior to completing the gas turbine commissioning period. In addition, Applicant requests that the deadline for submitting test reports be changed from 45 to 60 days to make the Condition of Certification consist with other air quality conditions. The enclosed markup of the air quality Conditions of Certification shows the requested changes.

PSA Condition of Certification AQ-83

This Condition of Certification reflects the requirements of SDAPCD PDOC Condition Number 83. As discussed in Applicant's January 5, 2009 letter to the SDAPCD, Applicant requests that the reference to VOC and SOx emission limits be removed from the condition because the condition does not include such emission limits.

Requested Changes to PSA Air Quality Conditions of Certification

GENERAL CONDITIONS

AQ-5 ~~For each combustion turbine, p~~**P**rior to the initial startup date of ~~that~~ **the first** turbine, the project owner shall surrender to the District Class A Emission Reduction Credits (ERCs) in an amount equivalent to ~~23.91~~ **47.82** tons per year of oxides of nitrogen (NOx) to offset the net maximum allowable increase of ~~19.93~~ **39.86** tons per year of NOx emissions for ~~that~~ **the two** turbine**s**. [Rule 20.3(d)(8).]

COMBUSTION TURBINE CONDITIONS

Definitions

AQ-10 For purposes of determining compliance with the emission limits of this permit, a shutdown period is the period of time that begins **at the start of the first 15-minute period when NOx and CO concentrations exceed the applicable limits after the operator initiates a shutdown sequence as documented in the operator log** ~~with the lowering of the gross electrical output (load) of the combustion turbine below 114 megawatts (MW)~~ and that ends five minutes after fuel flow to the combustion turbine ceases, not to exceed 35 consecutive minutes. [Rule 20.3(d)(1).]

AQ-15 A transient hour is a clock hour during which the change in gross electrical output produced by the combustion turbine exceeds ~~50~~ **10** MW per minute for one minute or longer during any period that is not part of a startup or shutdown period. **The number of qualified transient hours shall be limited to a cumulative total of 15 hours per rolling 12-month period above the NOx limit of 2.0 ppmvd at 15% O_2, for each gas turbine. A qualified transient hour shall meet all of the following requirements:**

A. This equipment operates under any of the qualified conditions described below:

- **Rapid gas turbine load changes initiated by the California ISO or a successor entity when the plant is operating under Automatic Generation Control;**
- **Rapid gas turbine load changes due to activation of a plant automatic safety or equipment protection system which rapidly decreases turbine load;**
- **The first two 1-hour reporting periods following the initiation/shutdown of the gas turbine inlet air cooler; and**
- **Events as the result of technological limitation identified by the operator and approved in writing by the District.**

B. The 1-hour average NOx emissions above 2.0 ppmvd at 15% O_2 did not occur as a result of operator neglect, improper operation or maintenance, or qualified breakdown under District rules.

C. The 1-hour average NOx concentration for periods that result from a qualified operating condition does not exceed 12 ppmvd at 15% O_2.

All NOx emissions during these events shall be included in all calculations of daily and annual emission rates as required by this permit. [Rule 20.3(d)(1)]

AQ-19 Turbine B is the combustion turbine as described on Applications No. 985745 or No. 985747, as applicable, that last completes its shakedown period. If both turbines complete their shakedown period on the same date, then Turbine ~~A~~ **B** is the turbine described on Application No. 985747. [Rules 20.1(c)(16) and 21 and 40 CFR §52.21.]

AQ-23 The combustion turbines shall be fired on Public Utility Commission (PUC) quality natural gas. The project owner shall maintain, on site, ~~daily and~~ quarterly records of the natural gas sulfur content (grains of sulfur compounds per 100 dscf of natural gas) and hourly records of the higher and lower heating values (btu/scf) of the natural gas; and provide records to District personnel upon request. [Rule 20.3(d)(1).]

Emission Limits

AQ-28 When a combustion turbine is combusting fuel (operating), the emission concentration of oxides of nitrogen (NOx), calculated as nitrogen dioxide (NO_2), shall not exceed 2.0 parts per million by volume on a dry basis (ppmvd) corrected to 15% oxygen, except during commissioning, low load operation, startup, shutdown, **qualified transient conditions,** or tuning periods for that turbine. For purposes of determining compliance based on CEMS data, the following averaging periods calculated in accordance with the CEMS protocol shall apply:

A. For any qualified transient hour, ~~a 3-clock hour average, calculated as the average of the transient hour, the clock hours immediately prior to the transient hour and the clock hour immediately following the transient hour~~ **the hourly average shall exclude minutes during qualified transient conditions**.
B. For all other hours, a 1-clock-hour average. [Rule 20.3(d)(1).]

AQ-29 When a combustion turbine is operating, the emission concentration of carbon monoxide (CO) shall not exceed 2.0 ppmvd corrected to 15 % oxygen, except during commissioning, low load operation, startup, shutdown, **qualified transient conditions,** or tuning periods for that turbine. For purposes of determining compliance based on CEMS data, the following averaging periods calculated in accordance with the CEMS protocol shall apply:

A. For any **qualified** transient hour, ~~a 3-clock hour average, calculated as the average of the transient hour, the clock hours immediately prior to the transient hour and the clock hour immediately following the transient hour~~ **the hourly average shall exclude minutes during qualified transient conditions**.
B. For all other hours, a 1-clock-hour average. [Rule 20.3(d)(1).]

AQ-30 When a combustion turbine is operating, the volatile organic compound (VOC) concentration, calculated as methane, measured in the exhaust stack, shall not exceed 2.0 ppmvd corrected to 15% oxygen, except during commissioning, low load operation,

startup, shutdown, **qualified transient conditions,** or tuning periods for that turbine. For purposes of determining compliance based on the CEMS, the District approved CO/VOC surrogate relationship, the CO CEMS data, and the following averaging periods calculated in accordance with the CEMS protocol shall be used:

A. For any **qualified** transient hour, ~~a 3-clock hour average, calculated as the average of the transient hour, the clock hours immediately prior to the transient hour and the clock hour immediately following the transient hour~~ **the hourly average shall exclude minutes during qualified transient conditions**.
B. For all other hours, a 1-clock-hour average.

The CO/VOC surrogate relationship shall be verified and/or modified, if necessary, based on source testing. [Rule 20.3(d)(1).]

Testing

AQ-54 Unless otherwise specified in this permit or authorized in writing by the District, within ~~45~~ **60** days after completion of a source test or RATA test performed by an independent contractor, a final test report shall be submitted to the District for review and approval. [Rules 20.3(d)(1) and 1200 and 40 CFR Part 60 Subpart KKKK, 40 CFR §60.8, and 40 CFR Part 75.]

AQ-62 The sulfur content of the combustion turbine fuel shall be sampled ~~daily~~ **quarterly** in accordance with ASTM D5287–97, Standard Practice for Automatic Sampling of Gaseous Fuels, and measured with ASTM D1072–90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases; ASTM D3246–05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry; ASTM D4468–85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry; ASTM D6228–98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection; or ASTM D6667–04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence or an alternative test method approved by the District and EPA. [[Rule 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75.]

CONTINUOUS MONITORING

AQ-63 The applicant shall comply with the **applicable** continuous emission monitoring requirements of 40 CFR Part 75.

AQ-66 No later than 60 calendar days after each combustion turbine commences commercial operation (defined for purposes of this condition as **when a gas turbine successfully completes initial performance and emission compliance tests** ~~the first instance when power is sold to the electrical grid~~), but no later than 180 calendar days after initial operation, a Relative Accuracy Test Audit (RATA) and other required certification tests shall be performed an completed on the that turbine's CEMS in accordance with 40 CFR Part 75 Appendix A Specifications and Test Procedures. At least 60 calendar days prior to the test date, the applicant shall submit a test protocol to the District for written approval. Additionally, the District and U.S. EPA shall be notified a minimum of 45 calendar days prior to the test so that observers may be present. Within ~~45~~ **60** calendar days of completion of this test, a written test report shall be submitted to the District for approval. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75.]

COMMISSIONING AND SHAKEDOWN

AQ-83 Beginning with the date Turbine A completes its shakedown period, aggregate emissions of oxides of nitrogen (NOx), calculated as nitrogen dioxide (NO_2); carbon monoxide (CO); ~~volatile organic compounds (VOCs)~~ particulate matter less than or equal to 10 microns in diameter (PM10)~~; and oxides of sulfur (SOx), calculated as SO_2~~ from the three utility boilers described on District Permits to Operate No. 791, 792, and 793, shall not exceed the following limits for each rolling 12-calendar-month period:

Pollutant	*Emission Limit, tons per year*
i. Oxides of Nitrogen, NOx (calculated as NO_2)	*16.33*
ii. Carbon Monoxide, CO	*214.85*
iii. Particulate Matter Less than 2.5 Microns, PM2.5	*21.78*
iv. Particulate Matter Less than 10 Microns, PM10	*26.91*

The aggregate emissions of each pollutant shall include emissions during all times that the equipment is operating including, but not limited to, emissions during startup,

shutdown, and tuning periods. [Rules 20.3(d)(3), 20.3(d)(8) and 21 and 40 CFR §52.1.]

Biological Resources Section Comments

Terrestrial Biology

Applicant concurs with Staff's findings that CECP will have a less than significant impact on terrestrial biological resources.

Applicant has reviewed Staff's proposed biological resources COCs and with the exception of the proposed revisions to BIO-8, below, Applicant finds the biological resources COCs acceptable.

Applicant finds that BIO-8, subsection 6, does not provide the Designated Biologist and biological monitors with discretion to determine whether construction activity will have any effect on nesting migratory birds, which may be discovered during construction. As originally drafted, subsection 6, in essence, forces the Designated Biologist or biological monitor to halt construction when any active nest was discovered between March 1 and August 15, regardless of site conditions and actual risk to nestlings and adult birds. The CECP site is a highly disturbed, existing industrial area with few, if any, sensitive species. Therefore, an absolute ban on construction upon the discovery of any active nest would be unnecessary and overly burdensome. Therefore, Applicant has revised BIO-8, as shown below, to provide the Designated Biologist and/or biological monitor authority to temporarily halt construction while he or she develops a monitoring plan to avoid potential impacts to migratory birds.

BIO-8 The project owner shall implement the following measures to manage its construction site (and related facilities) in a manner to avoid or minimize impacts to local biological resources:

1. install temporary fencing and provide wildlife escape ramps for construction areas that contain steep-walled holes or trenches if outside an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar material that is approved by USFWS and CDFG;

2. ensure that all food-related trash is disposed of in closed containers and removed at least once a week;

3. prohibit feeding of wildlife by staff and subcontractors;

4. prohibit non-security-related firearms or weapons on site;

5. prohibit pets on site;

6. avoid work between March 1 and August 15 to avoid impacts to birds protected under the Migratory Bird Treaty Act.

A. If this is not feasible, a survey shall be conducted for nesting birds within the project area.

B. Should an active nest be discovered, the Designated Biologist or biological monitor ~~will~~ **may** establish an appropriate buffer zone (in which construction activities are not allowed) to avoid disturbance in the vicinity of the nest **while a mitigation plan is developed**.

C. **If a buffer zone is created,** ~~C~~construction activities will not **re**commence **in that zone** until the Designated Biologist or biological monitor has ~~determined that the nestlings have fledged or that construction activities will not affect adults or newly fledged young.~~

~~D. Alternatively, the Designated Biologist or biological monitor will~~ develop**ed** a monitoring plan that permits the activity to continue in the vicinity of the nest while monitoring nesting activities to ensure that ~~the~~ nesting birds are not disturbed.

7. report all inadvertent deaths of sensitive species to the biological monitor, who will notify CDFG or USFWS, as appropriate; and

8. minimize use of rodenticides and herbicides in the project area.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures shall be reported in the monthly compliance reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how biological resource measures have been completed.

Marine Biology

An analysis of the potential effects of CECP on the marine environment was included in the PEAR and Staff included an analysis of the impacts of CECP on marine biological resources in the PSA. In general, Applicant agrees with Staff's findings regarding marine biology. However, after reviewing Staff's analysis of impacts to aquatic species on pages 4.2-15 and 4.2-16 of the

PSA, Applicant recommends that based on the information provided in the PEAR and its supporting documents that Staff makes a determination in the FSA that significant impacts to aquatic species are not expected.

On page 4.2-16, the PSA states: "It is anticipated that the CECP would facilitate the retirement of Encina Power Station Units 1, 2, and 3, which would substantially reduce the volume of seawater currently required for once-through cooling at the existing Encina Power Station." Applicant recommends Staff takes into account in the FSA that with the retirement of Units 1-3, the amount of ocean water used by EPS will decrease substantially. Units 1-3, permitted to use up to 225 million gallons per day (mgd) of ocean water for cooling, would be permanently retired with the approval of CECP. EPS is currently permitted to use a total of 857 mgd of ocean water. Therefore, CECP would reduce the specific Unit 1-3 maximum cooling water flow by over 98 percent and will reduce the total plant maximum cooling water flow by over 26 percent.

It is important to clarify that, as described in Section 2.3.2 of the PEAR, CECP will use a maximum (i.e., with power augmentation (PAG)) of 1.22 mgd of ocean water, not 4.32 mgd. 4.32 mgd is based on the use of only one of the auxiliary system pumps with a capacity of 3,000 gallons per minute (gpm).[1] A minimum intake of 3,000 gpm (or 4.32 mgd) will continue regardless of CECP operations. When CECP is operating, 1.22 mgd (or 848 gpm) of the intake volume would be used for ocean water purification, but this is not in addition to the flows generated by EPS (3,000 gpm to 439,200 gpm).

With regard to the brine discharge, the PSA incorrectly states that the salinity values of the discharge will be in violation of the proposed amendments to the Ocean Plan. Salinity concentrations in the discharge channel are expected to be 37.8 parts per thousand (ppt) as indicated in the PSA, but this only exceeds the "strictest proposed standard" of 36.5 mgd and does not exceed the more likely standard (10 percent increase over background levels). Nowhere in the nearshore environment will salinity values in the brine plume approach the threshold (38-40 ppt) for hyper-salinity tolerance of local marine organisms. This is described in New Appendix 5.2E of the PEAR. Also, as described above, intake flows (the basis for Applicant's salinity calculations) are conservatively estimated to be 3,000 gpm. Dilution is likely to be much greater most of the time.

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[1] There are actually two auxiliary system pumps, but the analysis was prepared assuming that only one of the pumps is operating. This ensured that the analysis of dilution was conservative. Dilution flows would typically be more than 3,000 gpm – up to 439,200 gpm when Units 4 and 5 are operating.

With these important clarifications, Applicant believes that additional conversations with the appropriate regulatory agencies will confirm the benefits of CECP related decreased intake of ocean water, such that Staff can determine that significant impacts to aquatic species are not expected. In fact, overall, CECP provides a substantial benefit to aquatic species.

Hazardous Materials Section Comments

Applicant concurs with Staff's findings regarding Hazardous Materials and agrees with the Conditions of Certification as proposed by Staff.

Applicant wishes to point out a typographical error under the "Summary of Conclusions" heading of this section, located on page 4.4-1 of the PSA. On line 6 under this heading, the PSA incorrectly refers to Applicant as "MMC Energy Inc." Applicant is Carlsbad Energy Center LLC.

Land Use Section Comments

Applicant agrees with Staff's conclusions regarding the consistency of CECP with the City's plans and policies and with the California Coastal Act. Applicant continues to work through agency permitting/entitlement issues associated with the amendment to the existing State Lands Commission Lease for the Encina Power Station's existing intake and outfall structure, replacement of the City's sewer line and sewer lift station, Caltrans proposed I-5 widening, and the fundamental goal of implementation of the Coastal Rail Trail.

Applicant agrees with Staff that CECP is consistent with applicable land use LORS. The City has passed several resolutions raising the question of CECP's land use compatibility. (Resolution No. 2008-235, adopted by City Council, Aug. 12, 2008; Resolution No. 2009-020, adopted by City Council and the Housing and Redevelopment Commission, Jan. 28, 2009.) While Staff has appropriately given due deference to the comments and recommendations of the City on matters that are within the City's normal jurisdiction, Staff is complying with its duty under CEC regulations to "independently verify the non-compliance, and advise the commission of its findings ...", where a responsible agency asserts that an applicable LORS mandate cannot be complied with. (20 Cal. Code Reg. § 1744(d), (e).) Resolution No. 2009-020 stated that "The California Energy Commission Staff should recognize City Council's authority in determining land use laws, ordinances, regulations, and standards." However, the CEC has exclusive jurisdiction to certify thermal power plants. (Pub. Res. Code § 25500.) The CEC must forward an AFC to "local governmental agencies having land use and related jurisdiction in the area of the proposed site and related facility. Those local agencies shall review the application and

submit comments on, among other things, the design of the facility, architectural and aesthetic features of the facility, access to highways, landscaping and grading, public use of lands in the area of the facility, and other appropriate aspects of the design, construction, or operation of the proposed site and related facility." (Pub. Res. Code § 25519(f).) The role of a local agency, such as the City, in the AFC process is thus limited to providing comments on the AFC; the local agency does not retain authority to determine the meaning and application of land use LORS.

Applicant has reviewed the Staff's proposed land use Condition of Certification LAND-1 and offers the following revision to ensure that this Condition of Certification meets the goal of Staff.

> **LAND-1** The project owner shall dedicate an easement for the Coastal Rail Trail ~~in a location~~ within the boundaries of the **overall** Encina Power Station Precise Development Plan~~.~~ **The easement shall be dedicated in a location** ~~area that is~~ mutually **agreed upon with** ~~acceptable to~~ the City of Carlsbad **or in a location decided by the CPM following submittal of a proposed location by the** ~~and~~ the project **owner** ~~or its successor in interest~~ pursuant to **the protocol below. If an easement is dedicated pursuant to the provisions of the** ~~§ 25529 of the Warren-Alquist Act. If no mutually acceptable easements are available within boundaries of the Encina Power Station~~ Precise Development Plan**, prior to occupancy/operation of the Poseidon Desalination Plant, then this condition will be deemed satisfied. If the project owner cannot reach agreement with the City of Carlsbad prior to construction, then it shall notify the CPM and the City of Carlsbad of such circumstances at least 90 days prior to the start of construction and follow the CPM approved location process provided for below in the protocol section of this condition.** ~~area (for example due to safety and security reasons), the project owner shall provide a mitigation fee payment to the city of Carlsbad or any other entity in charge of developing the Coastal Rail Trail within the City of Carlsbad.~~
>
> **Protocol: If the project owner cannot reach agreement with the City of Carlsbad for the location of the Coastal Rail Trail easement prior to the start of construction then it shall follow this procedure.**
>
> **1) Project owner shall notify the CPM and the City of Carlsbad at least 90 days prior to the start of construction that it was not able to reach agreement with the City of Carlsbad for the location of the easement.**

2) Not less than 30 days prior to construction, project owner shall submit a proposed easement location to the CPM and send copies of this submittal to the City of Carlsbad for review and comment.

3) The CPM shall accept comments on the proposed location from the City of Carlsbad and any other persons or parties for 60 days following receipt of the proposed location from the project owner.

4) Following the 60 day comment period, CPM shall designate a location for the easement. The CPM's decision shall reflect the following factors:

a) safety;
b) security; and,
c) minimizing impact on future use and development of the Encina Power Station.

5) The project owner shall dedicate the easement within 90 days of the decision by the CPM.

Verification: The project owner shall provide **proof of a mutually agreeable easement dedication or notice to the** ~~a mitigation fee payment for development of the Coastal Rail Trail to the city of Carlsbad or other entity previously approved by the~~ Compliance Project Manager (CPM) **of the inability to reach agreement at least 90 days prior to the start of construction.** ~~within 150 days of the start of construction. The fee payment will be determined by an independent appraisal conducted on available and comparable property on behalf of the City of Carlsbad or other entity in charge of developing the Coastal Rail Trail. The project owner shall pay all costs associated with the appraisal. The project owner shall provide documentation to the CPM that the fee has been paid and that the easements will be purchased within three years of start of operation as compensation for CECP project impacts on public use within the Coastal Zone. The documentation also shall guarantee that the easement purchased would be located within the city of Carlsbad. The project owner shall provide to the CPM updates in the Annual Compliance Report on the status of easement purchase(s).~~

Socioeconomics Section Comments

Applicant agrees with Staff's finding that there are no socioeconomic issues associated with CECP, and Applicant agrees with Staff's finding that CECP results in a positive socioeconomic benefit to the city.

Staff proposes no Conditions of Certification for Socioeconomics, and Applicant agrees that none are required.

Soil and Water Resources Section Comments

The Soil and Water Resources section of the PSA explicitly notes that the reclaimed water is not analyzed in the PSA. (See, e.g., Soil and Water Resources at 4.9-5). As previously noted, Applicant expanded the project to include a second possible source of water via purified ocean water, but did not eliminate the use of reclaimed water as a design option. The PEAR provides that if reclaimed water is not available at the time of final project design, then ocean water purification would be used as the source of industrial process water, and that the discharge stream from the plant consist of water from such purification processes. This PSA section, however, only contains an analysis of industrial process water provided by the ocean water purification system as industrial process water and analyzes disposal of water associated with the same. Because Applicant did not remove reclaimed water from the project description, the FSA should include an analysis of both reclaimed water and ocean water purification water sources for CECP as outlined in the PEAR.

One reason that Staff may have partially omitted the discussion of the use of reclaimed water for CECP may be the lack of a will-serve letter for reclaimed water. Applicant has provided information regarding various options and avenues that would allow reclaimed water to be supplied to CECP. For example, the City of Carlsbad has stated in its February 20, 2008 letter to the CEC that it intends to not renew a reclaimed water contract with the Leucadia Wastewater District when it expires in 2011. T hat contract for Title 22 reclaimed water is for 0.75 million gallons per day of reclaimed water delivered within the City of Carlsbad, and therefore means such capacity is potentially available for alternative uses, including the possible use by CECP. On a peak day it is estimated that the CECP would need approximately 700,000 gallons per day and, therefore, the Leucadia supply would be sufficient to meet the needs of CECP. While more work would be necessary to understand if this water is available, it is an example of the potential that reclaimed water supply could be available and therefore should be evaluated in the FSA.

The Leucadia possibility is just one of many ways that reclaimed water could be available for CECP. Applicant recognizes the important policy preference placed on the use of reclaimed water when possible at power plants and wishes to keep this option available as long as possible. For that reason the PEAR provides purified ocean water as an alternative source, not as a replacement for reclaimed water. Applicant can accept a condition of certification that would require the project owner to identify its source of water at some point prior to construction and to submit a reclaim water supply plan subject to CPM approval if the choice is reclaimed water.

On page 4.9-14 of the PSA, there is an inaccurate statement under the "Wastewater" heading that "CECP would generate approximately 62 million gallons per year of sanitary wastewater . . . ." The CECP water balances (Revised Figures 2.2-6a and 2.2-6b in the PEAR) show a wastewater discharge of 12 gallons per minute (also noted as 17,280 gallons per day). This is approximately equal to 6.3 million gallons per year, not 62 million gallons per year. Note also that the system is designed to accommodate 12 gallons per minute of wastewater discharge but this rate of discharge would not be sustained every minute of every day.

Proposed Conditions of Certification SOIL&WATER-1 and SOIL&WATER-2 require that the Construction SWPPP and Industrial SWPPP be reviewed and approved by the City of Carlsbad. Applicant proposes minor revisions to proposed Conditions of Certification SOIL&WATER-1 and SOIL&WATER-2 as follows:

SOIL&WATER-1: The project owner shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (construction SWPPP) for the construction of the CECP site, laydown and parking areas, and all linear facilities. The construction SWPPP shall be **provided to the City of Carlsbad for review** ~~reviewed and approved by the City of Carlsbad (City)~~ and shall include a Storm Water Management Plan (SWMP) per the requirements of San Diego Regional Water Quality Control Board (SDRWQCB) Order No. R9-2007-0001 and the City's Municipal Code Title 15, Chapter 15.12.

Verification: Prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) a copy of the construction SWPPP that complies with SDRWQCB Order No. R9-2007-0001 and the City's Municipal Code Title 15, Chapter 15.12 and retain a copy on site. The project owner shall submit to the CPM all copies of correspondence between the project owner and the City regarding the City's SWMP and the construction SWPPP within 10 days of its receipt or submittal. This information shall include copies of the Notice of Intent and Notice of Termination for the project.

SOIL&WATER-2: The project owner shall comply with the requirements of the NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (industrial SWPPP) for the operation of CECP. The industrial SWPPP shall be **provided to the City of Carlsbad for review** ~~reviewed and approved by the City of Carlsbad (City)~~ and shall include a Storm Water Management Plan (SWMP) in accordance with the requirements of San Diego

Regional Water Quality Control Board (SDRWQCB) Order No. R9-2007-0001 and the City's Municipal Code Title 15, Chapter 15.12.

Verification: Prior to commercial operation, the project owner shall submit to the CPM a copy of the industrial SWPPP that complies with SDRWQCB Order No. R9-2007-0001 and the City's Municipal Code Title 15, Chapter 15.12 and retain a copy on site. The project owner shall submit to the CPM all copies of correspondence between the project owner and the City regarding the City's SWMP and the industrial SWPPP within 10 days of its receipt or submittal. The industrial SWPPP shall include a copy of the Notice of Intent for the project.

Proposed Condition of Certification SOIL&WATER-4 discusses potable water as an emergency backup supply in the event of an ocean water supply interruption. As discussed below, while the Applicant does not agree that this requirement is necessary or appropriate, the condition can be met as noted in the CECP project description provided in the PEAR - see Revised Figures 2.2-6a and 2.2-6b, which show a connection to the Encina Power Station's potable water system. However, small interruptions in water supply can be managed by drawing down storage in onsite tanks (the Ocean Water Storage Tank, Ultrafiltration Storage Tank, Service Water Tank, or Demineralized Water Tank as appropriate depending on the nature of the interruption). If the duration of an interruption exceeds the capacity of the onsite storage system, CECP simply would not operate. Applicant does not believe this to be an unacceptable risk - the risk of failure of the ocean water purification system is similar to the risk of failure of other key processes associated with the CECP that do not include redundancies, all of which can be repaired during the normal course of operations and maintenance. This is also the case with the risk of failure of a reclaimed water delivery system. In addition, a backup water source is not needed to provide a safe condition. If the water supply system and backup storage water from that system become unavailable, there is no reliability or safety issue involved. Hence, a backup water supply is not a critical component of the system. For this reason, the Applicant requests that the emergency backup provisions of Condition of Certification SOIL&WATER-4 be deleted.

Condition SOIL&WATER-4 also includes a requirement that potable water not be used for any construction or operation activity that is suitable for non-potable water use. Applicant requests that this requirement be amended, and that potable water be allowed for construction purposes (e.g., dust control) as proposed unless reclaimed water is available at the site. In the event reclaimed water is available during construction, Applicant will use it if feasible. As described in the various filings and above, Applicant believes it may be able to ultimately arrange for delivery of Title 22 reclaimed water to the project site for plant operations. However, that would require a short connection to the reclaimed water supply line that may not be in place to utilize reclaimed water during construction if such reclaimed water supply is available.

Based on the foregoing, Applicant proposes the following revisions to Condition of Certification SOIL&WATER 4:

> **SOIL&WATER-4:** ~~Prior to connection to the City of Carlsbad's (City) potable water system, the project owner shall provide the CPM with two copies of an executed and final Potable Water Supply Agreement (agreement) for the long-term supply (30 to 35 years) of potable water. The agreement shall specify a minimum delivery rate of 432 gallons per minute in order to meet CECP's operation requirements in the event of an ocean-water supply interruption. In the event of an ocean-water supply interruption, potable water may be used as an emergency backup supply for up to 32 hours of plant operation per incident.~~ **Prior to the start of construction, the project owner shall provide the CPM with a report describing the availability of reclaimed water at the site in sufficient quantities to provide adequate dust control and meet other construction-phase water demands.** Potable water ~~shall not~~ **may** be used for ~~any~~ construction or operation activity that is suitable for non-potable water use **if it is demonstrated that reclaimed water is not available in sufficient quantities at the site**.
>
> **Verification:** ~~No later than 30 days prior to connection to the City's potable water system, the project owner shall submit to the CPM two copies of the final agreement. The project owner shall submit to the CPM any water quality monitoring reports required by the City in the annual compliance report. The project owner shall notify the CPM of any violation of the agreement's terms and conditions, the actions taken or planned to bring the project back into compliance with the agreement, and the date compliance was reestablished.~~ **No later than 90 days prior to the start of construction, the project owner shall submit the reclaimed water availability report to the CPM.**

Other than conditions SOIL&WATER 1, 2, and 4 addressed above, the Water COCs are acceptable. Staff's conclusions related to LORS compliance and potential soil-related impacts are in concurrence with Applicant's own conclusions that impacts would be less than significant with mitigation including Conditions of Certification SOIL&WATER 1 and 2 as revised herein, which contain requirements for construction and industrial SWPPPs.

Cultural Resources Section Comments

Applicant concurs with Staff's findings for Cultural Resources. Applicant agrees with the Conditions of Certification as proposed by Staff.

Noise and Vibration Section Comments

Applicant has evaluated the PSA and concurs with Staff's findings that there will be no significant Noise and Vibration impact during construction or operation of CECP. Applicant accepts the Noise Conditions of Certification as written.

Regarding potential impacts during construction of the Project in the event that pile driving is required, Applicant agrees with Staff's finding in the PSA that vibration attenuates rapidly and therefore Staff concludes it is likely that no vibration would be perceptible from pile driving at any appreciable distance from the Project site and, therefore, Staff finds there would be no significant impact from construction vibration. Applicant agrees with this finding and conclusion.

In support of the Staff's analysis and finding regarding no significant impact from construction vibration, including in the event piling driving is required, Applicant hereby provides this analysis of the potential for impacts to the City's existing 42-inch-diameter buried sewer pipeline from potential pile driving induced vibration. As discussed below, the potential for impacts to the existing City sewer pipeline are considered very low.

Similar to the FTA guidance referenced by Staff in the PSA, the California Department of Transportation (Caltrans) document entitled *Transportation- and Construction-Induced Vibration Guidance Manual, June 2004* (the manual) provides methods to evaluate potential of off-site construction vibration from pile driving (specifically Chapter 7, Section A). The Caltrans manual provides useful background information on potential impacts to buried pipelines that is not addressed in the FTA guidance.

Equation 9 of the Caltrans manual was used to estimate the Peak Particle Velocity (PPV) by impact pile driving at the proposed site. This equation is a function of distance (D) from the vibration source to the vibration receptor (buried pipe, in this case), the value "*n*" (*n*) related to the attenuation rate through ground, and the rated energy (E) of the impact pile driver in foot-pounds. The following were used in this prediction equation:

- D = 150 feet, estimated closest distance from the potential pile driving location to the existing buried sewer pipeline
- $n = 1.1$, related to the vibration attenuation through the ground; value recommended by the manual in the absence of specific geotechnical information
- E = 80,000 foot-pounds, impact hammer size commonly used on a Project of this size

Based on these parameters, the PPV from pile driving is estimated to be about 0.14 inches per second. Appendix A to the manual states the building damage threshold from pile driving is

somewhere between a PPV of 0.2 and 2 inches per second (which is consistent with the values cited by Staff). Note that buried pipelines, however, will have much higher vibration thresholds. As noted in the manual (pp 59), "buried pipelines, if properly constructed, can withstand high vibration intensities being constrained by bedding and pipe zone material".

Specific to buried pipe, Table 22 in the manual indicates a blast-induced PPV of 50 to 150 inches per second measured at a buried pipe and resulted in no damage to the pipe. Vibrations caused by blasting are transient and those by pile driving are considered continuous/frequent intermittent sources. The manual states that the equivalent PPV caused by a continuous/intermittent source such as pile driving is approximately one half of the transient value. Therefore, an equivalent intermittent PPV of approximately 25 to 75 inches per second is estimated causing no damage to the buried pipe. The estimated value of 0.14 inches per second is well below these values.

Also noted in Table 22 are transient PPV values considered safe with respect to plaster damage, (2.0 inches per second). Again, noting the intermittent PPV would be approximately one half of this value, or 1.0 inches per second, indicates the estimated vibration from pile driving of 0.14 inches per second is well below the threshold expected to cause plaster damage.

Seismic settlement and/or liquefaction impacts to the buried pipe from potential pile driving were also considered. Figure 11 from the Naval Facilities Engineering Command design manual DM-7.3 (NAVFAC DM-7.3) indicates vibration induced ground acceleration would be well below 0.01g would result from a cyclic vibration source with a PPV of 0.14 inches per second. A typical threshold to evaluate for seismic settlement and liquefaction is at least 0.1g or greater. Therefore, the impact from pile driving induced vibrations causing settlements to the buried pipe is considered very low.

In conclusion, the potential for impacts to the existing buried pipeline from pile driving vibrations, settlement or liquefaction are very low.

References:

California Department of Transportation's Environmental Program, Environmental Engineering, Noise, Vibration, and Hazardous Waste Management Office. 2004. *Transportation- and Construction-Induced Vibration Guidance Manual.* June.

Naval Facilities Engineering Command (NAVFAC). 1997. *Soil Dynamics and Special Design Aspects*, Engineering Design Manual DM-7.3. November.

Public Health Section Comments

Applicant concurs with Staff's findings for Public Health.

Traffic and Transportation Section Comments

Applicant concurs with Staff's findings and conclusions that no significant traffic or transportation impacts will occur as a result of construction or operation of CECP. Staff concluded that with implementation of proposed Conditions of Certification TRANS-1 through TRANS-8, CECP will not generate a significant impact with respect to transportation and traffic. Applicant has reviewed the Conditions of Certification and associated verifications and finds the Conditions of Certification acceptable as written

Transmission Line Safety and Nuisance Section Comments

Applicant concurs with Staff's findings and conclusions for Transmission Line Safety and Nuisance. Applicant agrees with Staff's proposed Conditions of Certification.

Visual Resources Section Comments

The visual resources assessment presented in the PSA is well-crafted and thorough. Applicant agrees that, with Staff's findings and conclusions that with Staff-recommended Conditions of Certification, CECP would not introduce an adverse aesthetic impact. Staff's visual resources Conditions of Certification (VIS-1 through VIS-4) are acceptable to Applicant as written.

The following comments address several topics discussed in the PSA Visual Resources analysis.

Condition of Certification VIS- 2

VIS- 2 states:

> Trees and other vegetation consisting of informal groupings of tall, fast-growing evergreen shrubs and trees shall be strategically placed along the eastern, western, and northern facility boundaries as called for in the data responses presented in this section, consistent with transmission line safety requirements. The objective shall be to create landscape screening of sufficient density and height to screen the power plant structures to the greatest feasible extent within the shortest feasible time and to provide timely replacement for aging or diseased tree specimens on site in order to avoid future loss of existing visual screening. The design approach shall include both fast-growing tall shrubs to provide quick screening and tall trees similar to those existing on site, such as

Eucalyptus, ultimately to provide an overall canopy height comparable to that existing atop the CECP site earth berms.

The CECP Conceptual Landscape Plan provided as Data Response 107 illustrates proposed Project landscape screening in the areas specified by VIS-2. Project landscaping will supplement the existing screening provided by the landscaped berms currently found at the CECP site. It is Applicant's understanding that, in order to satisfy the explicit requirements of VIS-2, both the existing landscaped berms and the proposed perimeter project landscaping will need to be preserved and maintained for the life of CECP. Applicant agrees with VIS-2.

Fuel Oil Tank Removal

The description in the Visual Resources section of the PSA of Tank 3 (the southernmost fuel oil tank located west of the railroad tracks) being removed for the proposed Carlsbad Desalination Plant project is accurate; however, the PSA incorrectly states that the two northernmost fuel oil tanks located west of the railroad tracks (Tanks 1 and 2) will be demolished and used for construction laydown sites "D" and "E." (See PSA pp. 4.12-5, 4.12-9.) These tanks will not be removed as part of CECP as it is the area surrounding this tanks that will be used for construction laydown sites "D" and "E". The use of these areas for construction laydown does not require the demolition/removal of Tanks 1 and 2. These two tanks will remain as part of CECP.

Ocean Water Purification System and SDG&E 230 kV Switchyard

The PSA visual assessment does not address two of the proposed Project components: the ocean water purification system and the new SDG&E 230kV Switchyard that were incorporated into CECP in the PEAR. The visual resources assessment in the PEAR analyzed and addressed these two additional components of the Project. For a complete description of the ocean water purification system, Staff is referred to Section 2.0 of the PEAR. The ocean water purification system consists of two above ground water pipes that will connect to the existing seawater discharge underground pipe just east of the EPS entrance. One pipe will take ocean water from the EPS discharge pipe and deliver it to the CECP site and the second pipe will deliver the diluted RO reject back to the existing EPS discharge pipe. These two pipes will pass through an existing utility tunnel under the railroad tracks to enter the CECP site. The ocean water will be treated in trailer mounted RO units located within the CECP power block area. Because the ocean water purification system facility consists of only the two above ground pipelines and the trailer mounted RO units, it will not be particularly noticeable to the public.

As discussed in Section 2.0 of the PEAR and as shown on 2.1-1 of the PEAR, the new SDG&E 230kV Switchyard will be located on a parcel owned by SDG&E, located south of the CECP site. An existing switchyard and existing SDG&E electrical transmission towers for the 130kV

and 230kV circuits are located on this SDG&E parcel. The new 230 kV switchyard will occupy approximately 2.5 acres of disturbed land located between Interstate 5 and the railroad corridor. The location of the new 230kV switchyard site lies about 750 feet north of Cannon Road. The tallest switchyard component, the take-off structure, will be about 55 feet in height.

Portions of the new switchyard will be seen from limited areas. Due to intervening topography, vegetation and development, the switchyard site is not generally visible from the Key Observation Points (KOPs) employed for purposes of the PSA visual analysis. It is expected that portions of the new 230kV SDG&E Switchyard could be visible from limited areas including places along Interstate 5, Cannon Road, and the railroad corridor. In addition, the switchyard could also be partially visible from near the north end of Avenida Encinas. Attached Figure A-2 presents four photographs that portray representative public views toward the 230kV switchyard site. The location of these photo viewpoints is shown on Figure A-1.

Photo A-1 is a view from Cannon Boulevard, west of the site. From this location the concrete block perimeter wall of the existing SDG&E site and mature trees located along Cannon Road and on the power plant site screen views toward the proposed switchyard. Photo A-2, taken from the park located on Cannon Road at Avenida Encinas, includes the existing EPS stack, seen beyond existing vegetation at the left side of the photo. From this location, the new substation will be screened by vegetation and buildings which are located across Avenida Encinas, seen on the right side of the photo. Photo A-3 is a view from northbound on Interstate 5 looking northwest toward the switchyard site. Although a split second, partial view of the new switchyard may be available from northbound Interstate 5, mature trees to the west of the roadway as well as by tall shrubs in the Interstate 5 median will generally screen views of the new switchyard structures. Photo A-4, a view along Cannon Road from the roadside fruit stand, encompasses low agricultural fields and overhead transmission lines supported on steel poles in the foreground. The existing EPS and transmission lines appear prominently in the background and the middleground, respectively, in this view from about a quarter mile east of the switchyard site.

Figure A-3 presents a before and after view of the new 230kV switchyard as seen from this Cannon Road vantage point (A-4). This simulation shows portions of the new switchyard on the left side of the view with the existing transmission towers in the center and on the right. Vegetation to the west of Interstate 5 partially screens lower portions of the switchyard and new transmission towers. The simulation demonstrates that where the new 230kV switchyard will appear against a backdrop of the existing EPS, it will barely be visible. Other portions of the new 230kV switchyard will be visible against the sky; however, given the presence of existing structures, the new elements will not be particularly noticeable. A comparison of the before and after images demonstrates that the new 230kV switchyard will not be particularly noticeable

from this area along Cannon Road. Mature trees to the south and west will screen the lower parts of the switchyard when seen from other nearby locations. Overall these visual changes are relatively minor and will not result in a significant visual impact.

The following additional comments address visual issues raised during the course of the PSA Workshop on January 8, 2009.

Easement for City Sewer Line Replacement and Potential Conflict with Proposed CECP Berm

As discussed during the Land Use portion of the PSA Workshop, replacement of the City's Interceptor sewer line is anticipated along the western embankment of the CECP site, east of the rail corridor. The CECP plans call for locating a new landscaped berm in this general area. The final location of the sewer easement will be mutually agreed upon by the City and Cabrillo Power I LLC, the owner of the existing EPS. The location of this easement will be compatible with installing a new berm as well as tree and shrub groupings designed to provide additional visual screening of CECP.

Visual Rendering submitted by the City of Carlsbad

In October 2008, the City prepared a rendering that attempted to depict CECP and the Caltrans' future widening of Interstate 5. Caltrans is currently evaluating several alternative alignments for the Interstate 5 widening adjacent to the CECP site, but has not selected a preferred alignment and has not yet completed and released an EIS/EIR for public and agency review and comment. The City's rendering is highly inaccurate and misleading, and speculative for a variety of reasons including:

- The size of CECP is exaggerated in relationship to existing landscape features, including the EPS building and stack. The location and scale of CECP is distorted. No supporting information has been provided by the City to document the source of the data used as the basis for this rendering, nor has information been provided to document how the rendering was prepared or how the photograph was taken. Absent this critical information, this rendering cannot be fully analyzed to define its specific technical failings. While the rendering has been represented by the City as being a simulation, it is clearly not a representative simulation and should be considered a speculative rendering with no basis in reality.

- The City's rendering shows a widened Interstate 5, with the existing vegetation and earthen berm bordering the east of the CECP site completely removed. This portrayal is

speculative and misleading, and is not supported by any documentation provided by Caltrans. No information is provided by the City to support the technical basis for the assumptions illustrated in the rendering.

- The location of the photo vantage point is not clearly identified. The actual photo location is, therefore, unknown and it may or may not represent a public view.

- The photographic perspective appears distorted and there is no information documenting the camera and lens used to shoot the photograph.

- Key technical information is lacking, including the methodology used to produce the computer rendering and procedures employed to verify its accuracy.

New Figure 1 is an accurate computer-generated visual simulation showing the appearance of Applicant from a vantage point along Adams Street near Hoover Street looking southwest. The "before" and "after" image correctly portray the site and the appearance and scale of CECP from a known public vantage point, delineated on Figure 2. The simulation demonstrates that the existing EPS structures appear prominently and, when seen within this context, portions of CECP, including the new stacks, will appear in close proximity to the larger existing facility.

The Figure 1 photo was shot in June 2007 using a single lens reflex (SLR) digital camera with a 50 mm lens equivalent that captures a horizontal view angle of 40 degrees. Global positioning system (GPS) technology and aerial photo basemap recording was employed to document the photo viewpoint location. A brief description of the computer modeling and technical procedures used to produce this accurate simulation image are outlined below.

Existing topographic and site data provided the basis for developing an initial digital site model. CECP engineers provided site plans and digital data for the proposed facility and existing structure removal. These were used to create a three dimensional digital model of the proposed facility. This model was combined with the digital site model to produce a computer model of the Project. Viewer location was entered from GPS data and scaled aerial photos, using 5 feet as the assumed eye level. A computer "wire frame" perspective plot was then overlaid on the photograph to verify scale and viewpoint location. The digital visual simulation image was then produced based on computer renderings of the 3-D model combined with digital versions of the selected site photographs. The final "hardcopy" visual simulation image has been printed from the digital image files and produced in color on an 11 by 17 inch sheet. The images are presented at a size that is approximately 9 inches in width. These "before" and "after" images should be viewed at a distance of approximately 12.5 inches to gain an optimal impression of the Project's scale in relationship to the surrounding landscape.

Waste Management Section Comments

Applicant concurs with Staff's findings and conclusions for Waste Management. Applicant finds Staff's proposed Conditions of Certification acceptable.

Worker Safety/ Fire Protection Section Comments

Applicant concurs with Staff's findings and conclusions that CECP, through the implementation of required Conditions of Certification **WORKER SAFETY-1** through **-5**, would incorporate sufficient measures to ensure adequate levels of industrial safety and comply with applicable laws, ordinances, regulations, and standards. The Conditions of Certification provide assurance that the Construction Safety and Health Program and the Operations and Maintenance Safety and Health Program proposed by Applicant would be reviewed by the appropriate agencies before implementation. The conditions also require verification that the proposed plans adequately assure worker safety and fire protection and comply with applicable laws, ordinances, regulations, and standards.

Regarding fire protection, Staff notes that the Carlsbad Fire Department (CFD) has stated that its ability to respond during a major crisis, such as a major seismic event per the Record of Conversation between Staff and CFD, would be restricted by such event and the access of emergency services to the plant during such an event may be impacted by the operation of CECP and thus Staff concluded that this Project would have a significant cumulative impact on CFD's ability to respond to a fire or medical emergency.

While Applicant acknowledges that there may in fact exist a current significant cumulative impact on CFD's ability to respond to a fire or medical emergency throughout the City in the event of a major crisis, such as a major seismic event, this is an existing situation and is not related to CECP as this potential situation will continue in the future with or without CECP. CECP complies will all applicable LORS in this regard.

Staff proposed that Applicant meet with CFD to identify suitable mitigation for CECP's prorated fair share to the Project's cumulative contribution to increase emergency response. Per Staff's recommendation, Applicant and CFD met on January 26, 2009 to discuss CFD's concerns regarding emergency response. The primary objectives of the meeting were to:

- assure CFD and the City that CECP will be designed in direction coordination with the CEC, CBO, and City Fire Marshal in a manner to comply with all applicable LORS; and,

- understand CFD's concerns associated with City-wide emergency response due to major crisis, such as a major seismic event, and CFD's perceived ability to respond to CECP in the event of such a major crisis.

Applicant found the meeting productive and that it underscored the need for continued communication with CFD irrespective of the proposed CECP; that such communication will improve CFD's understanding and response to CECP and Encina Power Station as a whole. The meeting highlighted questions and comments associated with the CECP site layout and ingress and egress to and around the Project site and Fire Code interpretation and conformance.

With respect to Staff's conclusions that the Project will have a significant cumulative impact on CFD's ability to respond to a major crisis, such as a major seismic event, Applicant is completing a quantitative risk analysis of impacts to CECP and corresponding impacts to the public from a major crisis, such as a seismic event that may result in impacts in CECP operations and/or restrict access of emergency services to CECP due to damage to or blockage of City streets and roads, and to I-5. The quantitative analysis will consider concerns related to access to CECP in the event that CFD cannot access areas west of I-5 from the east of I-5 due to damage to or blockage of City streets and road, and to I-5. The analysis will also consider the reduction of hazardous and hazardous materials associated with CECP, namely the removal of oil storage tanks 5-7 and the securing of Units 1-3 associated with their retirement, and the design features of CECP Also, CECP security measures will be considered that minimize the potential for domestic terrorism related impacts or impacts associated with I-5 and contemplated modifications of I-5.

Applicant continues to find that CECP will not have a significant impact, cumulative or otherwise, upon CFD's ability to respond in a major crisis and that, in fact, CECP probably lessens existing risk and response requirements. Applicant will, however, submit the above-described analysis and remains willing to fund suitable and proportionate mitigation that would satisfy Staff.

Applicant understands that the City will undertake a several month city-wide Fire Needs Assessment that will consider the current and future build out of the City. Applicant will cooperate with the City during the study to provide relevant information about Encina Power Station and CECP that may aid their analysis of associated city-wide needs.

III. ENGINEERING ASSESSMENT

Facility Design section comments

Applicant finds this section to be accurate and complete.

Geology and Paleontological Resources

Applicant concurs with Staff's findings and conclusions that no significant geologic impacts will occur and that no significant impacts to paleontological resources will occur and finds Staff's proposed Conditions of Certification to be acceptable.

Power Plant Efficiency

Applicant finds this section to be accurate and complete.

Power Plant Reliability

The PSA incorrectly assumes that reclaimed water will not be used for CECP. As noted above, the PEAR added the ocean water purification system as an optional source of water, but not at the exclusion of the reclaimed water option. Applicant does not believe this significantly changes the findings or conclusions regarding reliability, but the FSA should reflect both options accordingly.

Transmission System Engineering

Applicant finds this section to be accurate and complete

Natural Gas Supply

Please note, in various locations of the AFC the natural gas supplier is references to Southern California Gas Company (SoCalGas). The correct natural gas supplier and owner/operator of the natural gas pipeline system is San Diego Gas & Electric (SDG&E). The following are the sections and page numbers in the AFC where the natural gas supplier is identified incorrectly as SoCalGas and for the record these references should be changed to SDG&E.

- 1.0 Executive Summary, Page 1-2, 1.2 Project Overview, Third Bullet

- 1.0 Executive Summary, Page 1-3, 1.2 Project Overview, Third Full Paragraph, Second Sentence
- 1.0 Executive Summary, Page 1-6, 1.5 Project Ownership, First Paragraph
- 2.0 Project Description, Page 2-1, 2.1 Introduction, Fifth Paragraph, Third Sentence
- 2.0 Project Description, Page 2-8, 2.2.6 Fuel System, Second and Third Paragraphs
- 2.0 Project Description, Page 2-31, 2.3.2.3 Fuel Availability
- 4.0 Natural Gas Supply, Page 4-1, 4.1 Introduction, First Paragraph
- 4.0 Natural Gas Supply, Page 4-5, 4.3.1 Gas Pipeline, Bullet 9.
- 5.2 Biological Resources, Page 5.2-12, Table 5.2-6 Summary of Potential CECP Impacts on Biological Resources During Construction, Location: Natural Gas Pipeline
- 5.5 Hazardous Materials, Page 5.5-20, 5.5.4.4 Fire and Explosion Risk, Fourth Paragraph, First Sentence
- 5.10 Socioeconomics, Page 5.10-10, 5.10.3.7.1 Electricity and Gas, Second Sentence on the page.

IV. ALTERNATIVES AND GENERAL CONDITIONS COMMENTS

Alternatives Section Comments

Applicant concurs with Staff's conclusions on alternatives, finding that the proposed alternative sites do not substantially reduce or avoid any potentially significant adverse impacts of CECP, while also meeting the basic objectives of the Project. However, there are several assumptions and findings in the comparison of the alternative sites to the CECP site that should be corrected in the FSA.

- The Cato Alternative would have a greater potential impact to biological resources, compared to the CECP site, because the Cato site is undisturbed open space, while the CECP site is a developed industrial use. Alternatives Table 2 thus incorrectly lists the Cato Alternative as "similar to proposed site," in comparing impacts to biological resources.

- The distances to the 138kV and 230kV power lines and to the natural gas line from the CECP site, listed in Alternatives Table 1, are also incorrect. The CECP site is "adjacent

to" the 138kV power line and "adjacent to" the 230kV power line. CECP would connect to a natural gas line that is "adjacent to" the site. (*See* PEAR Figures 2.1-1 and 2.2-1.)

- The distance from a reclaimed water line to the CECP site is listed in Table 1 as "N/A (desal)." However, as the Project Enhancements and Refinements document explained, the use of the ocean water purification system is an *alternative* to the use of reclaimed water. Therefore, the proximity and convenience of reclaimed water to the CECP site has great relevance. CECP intends to use reclaimed water for its industrial process water if adequate supply is available from the City. The City's reclaimed water line is 3,000 feet from the CECP site near Cannon Road.

General Conditions Comments

Applicant finds the general conditions acceptable as proposed by Staff.

V. SUMMARY AND CONCLUSION

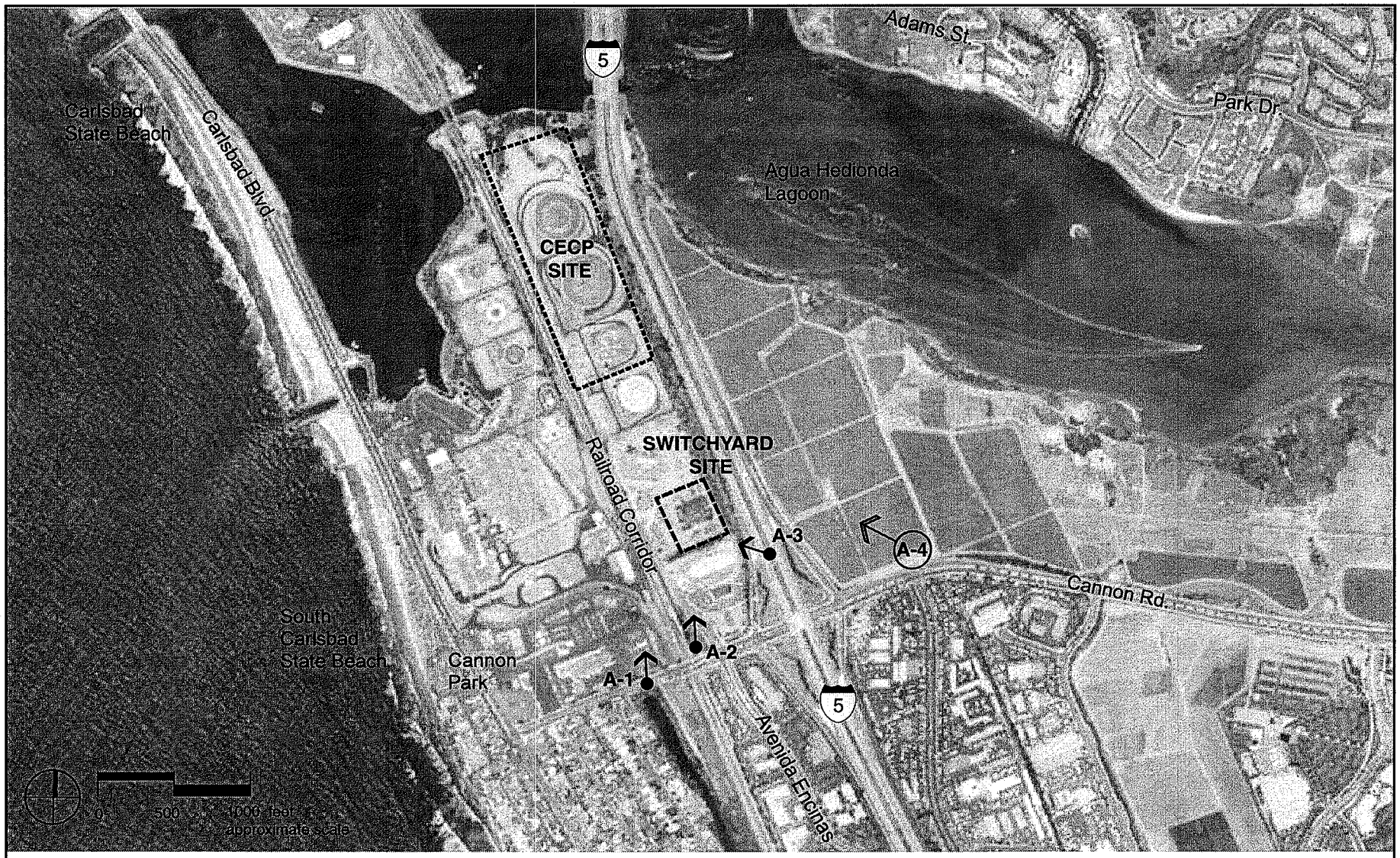
Applicant has proposed changes to Conditions of Certification in ***Soil and Water***, ***Land Use*** and in numerous ***Air Quality*** conditions. Further, Applicant has provided a new rendering and very detailed comments regarding ***Visual Resources*** to ensure that the Project's visual characteristics are fully and accurately understood. Applicant has also made important comments regarding the consistency of ***the Project Description*** through the PSA, especially in terms of the dual sources of water and means of wastewater discharge created by the PEAR. Applicant's comments on ***Air Quality*** are extensive, but that is mostly a function of the detailed character necessary in air quality Conditions of Certification. Finally, Applicant made comments on the fire protections issues raised by Staff in the ***Worker Safety and Fire Protection*** section.

The PSA is a very thorough and accurate assessment of CECP and demonstrates why this important and valuable project will greatly benefit the City and the region. Applicant looks forward to receiving the Final Staff Assessment and completing the approval of this AFC.

Respectfully submitted,

for John A. McKinsey

cc: See attached Proof of Service



This figure shows viewpoint locations for 4 new photographs looking toward the new SDGE 230kV Switchyard site. These photos supplement a set of 31 photos presented in the AFC (Figures 5.13-4 and 5.13-5). This map is an enlarged portion of the AFC Figure 5.13-3

A-4 → **Switchyard Simulation Viewpoint**

A-1 → **Photo Viewpoint**

ENVIRONMENTAL VISION

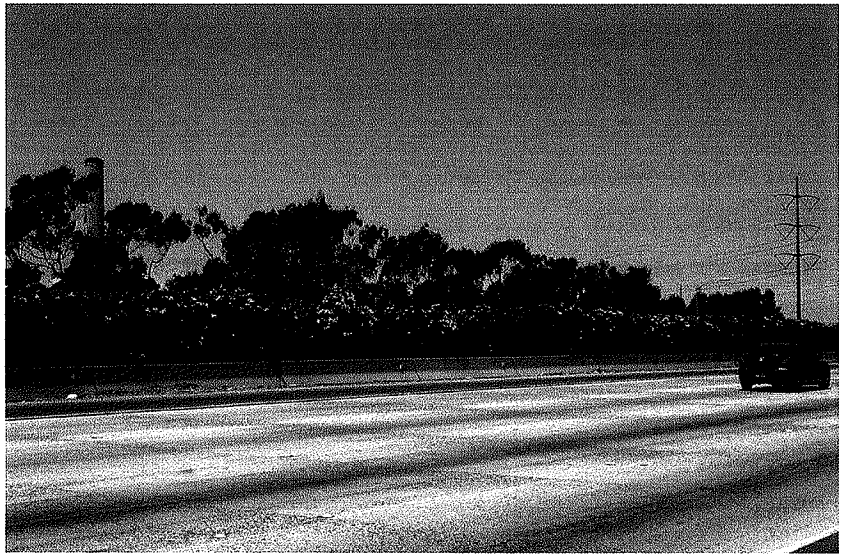
FIGURE A-1
NEW SDG&E 230kV SWITCHYARD PHOTO VIEWPOINT LOCATIONS
CARLSBAD ENERGY CENTER PROJECT

CH2MHILL

070208

A-1. Cannon Boulevard looking north

A-2. Mini-park on Cannon Road and Avenida Encinas



A-3. Interstate 5 northbound looking northwest

A-4. Strawberry fields along Cannon Road looking northwest

Refer to Figure A-1 for photo viewpoint locations

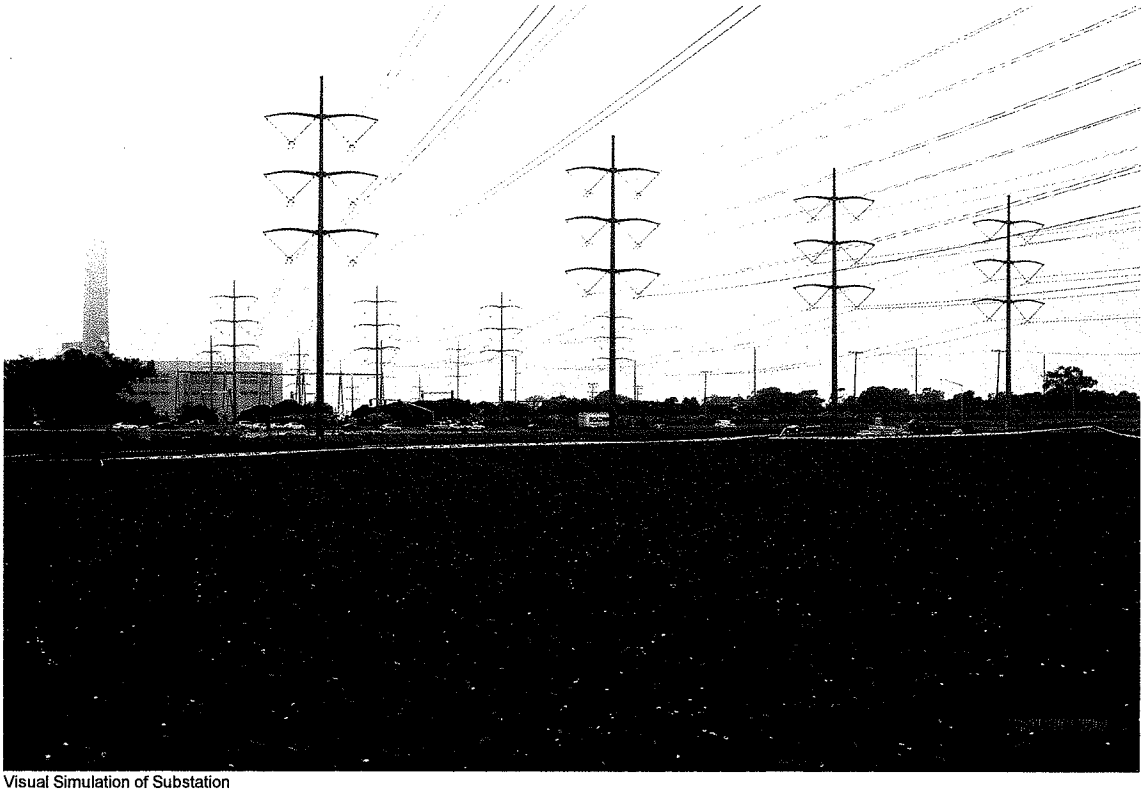
FIGURE A-2
VIEWS TOWARD NEW SDG&E 230kV SWITCHYARD SITE
CARLSBAD ENERGY CENTER PROJECT

ENVIRONMENTAL VISION

070308

CH2MHILL

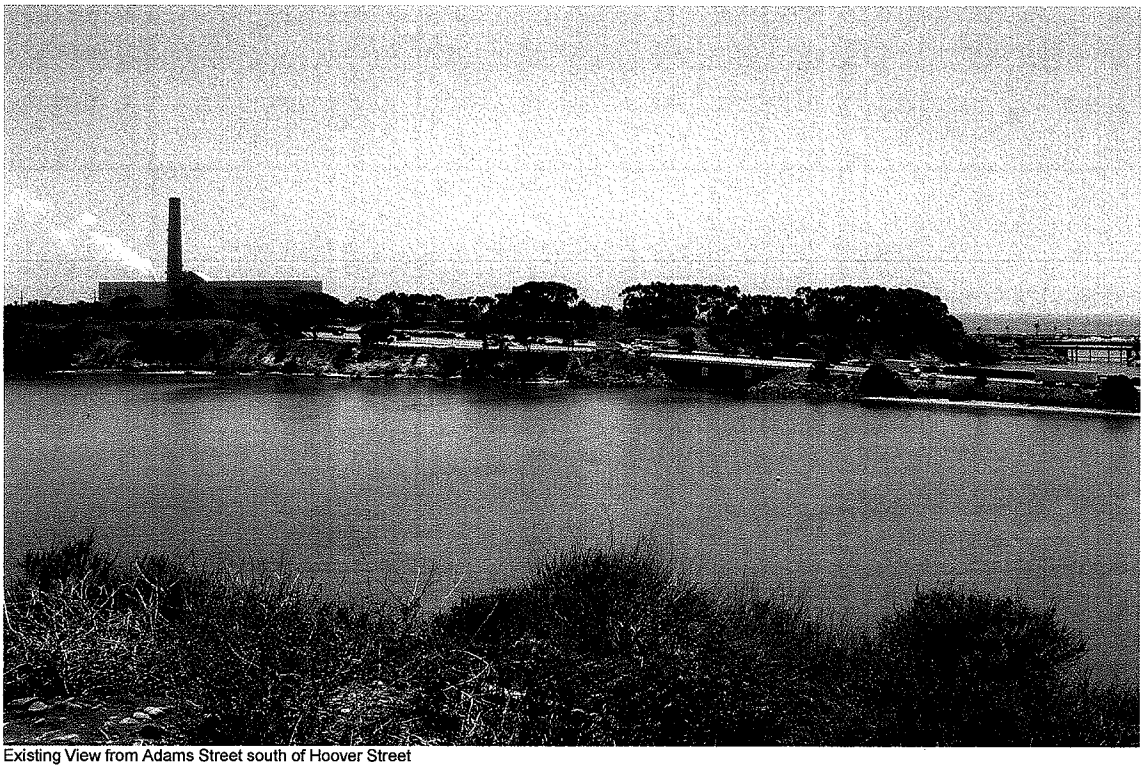
Existing View from Strawberry Fields along Cannon Road



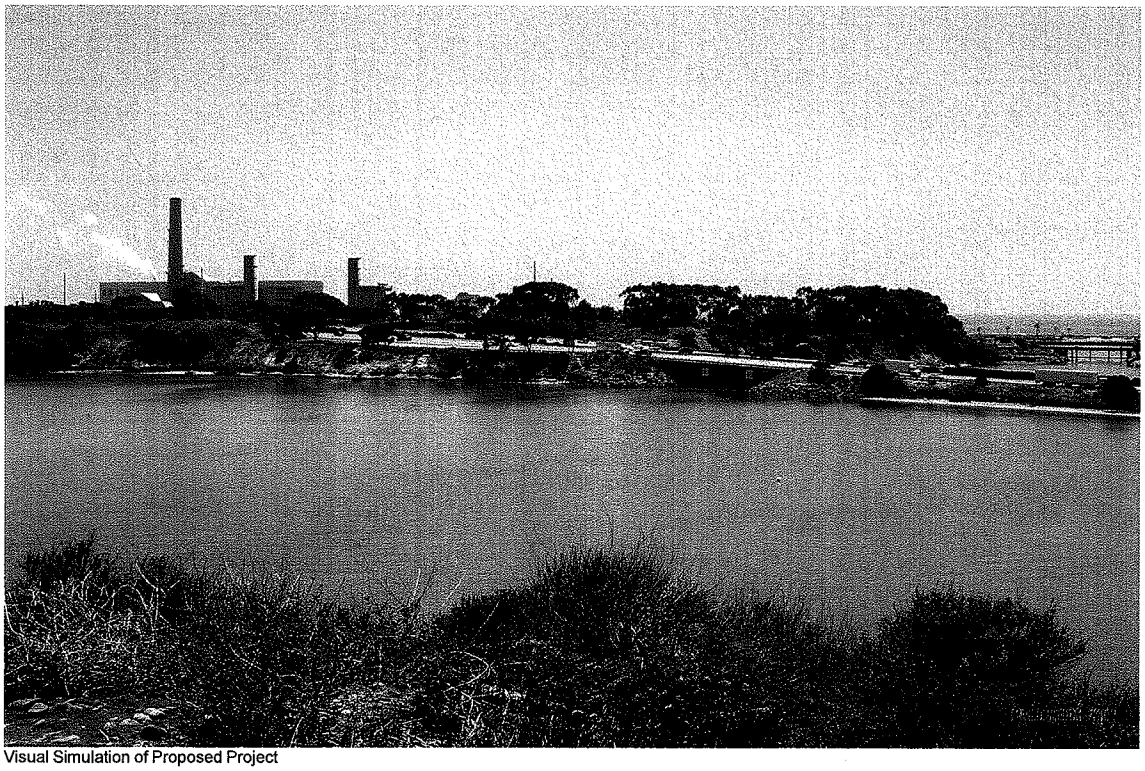
Visual Simulation of Substation

For viewpoint location refer to
Figure A-1 Viewpoint A-4

FIGURE A-3
NEW SDG&E 230kV SWITCHYARD
EXISTING VIEW AND VISUAL SIMULATION
CARSLBAD ENERGY CENTER PROJECT



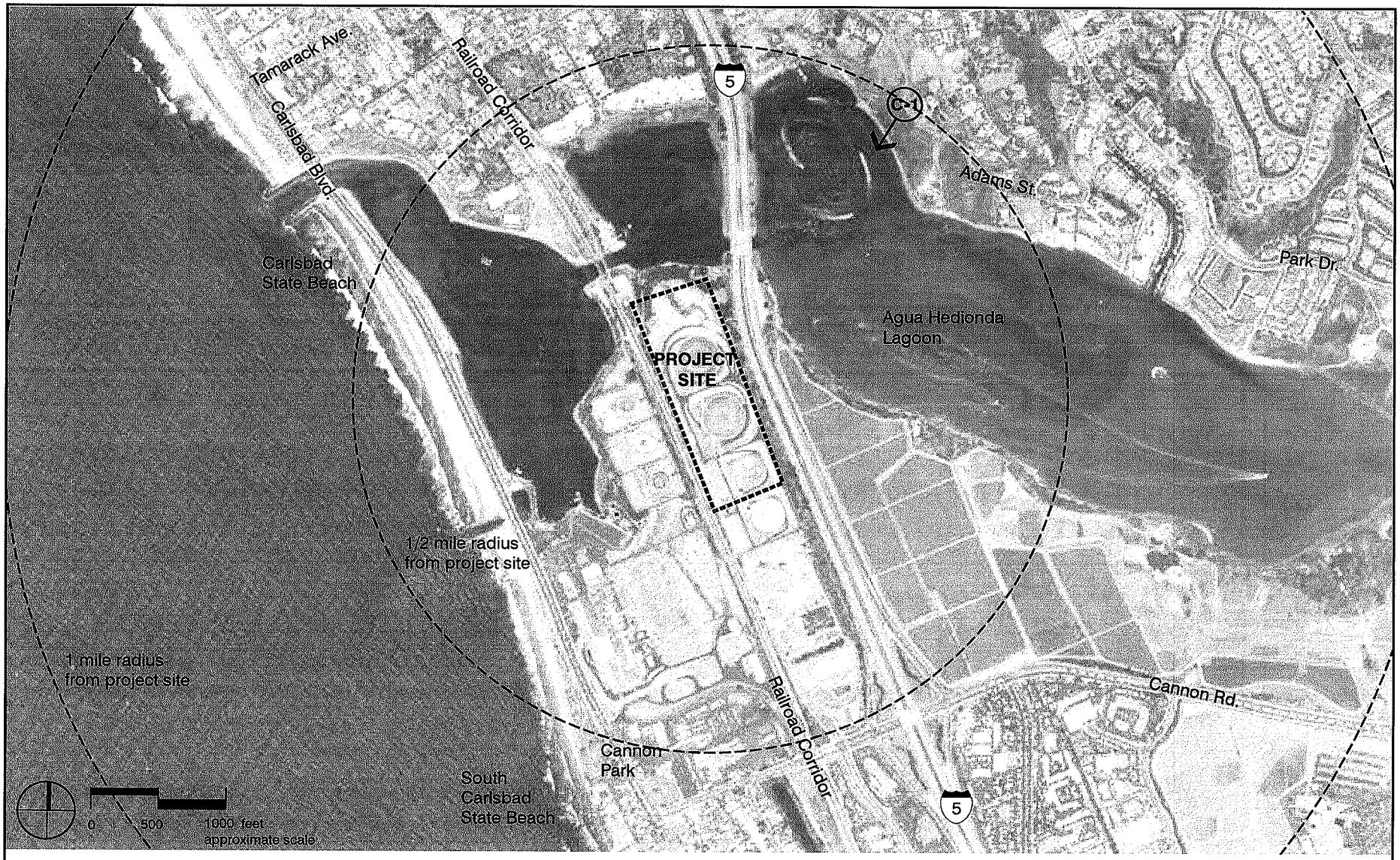
Existing View from Adams Street south of Hoover Street



Visual Simulation of Proposed Project

FIGURE 1
ADAMS STREET
EXISTING VIEW AND VISUAL SIMULATION

CARSLBAD ENERGY CENTER PROJECT



This figure shows the viewpoint location for the new simulation photo.
This map is an enlarged portion of the AFC Figure 5.13-3 basemap.

C-1 → **Supplemental Simulation Viewpoint**

FIGURE
PHOTO VIEWPOINT LOCATIONS
CARLSBAD ENERGY CENTER PROJECT

ENVIRONMENTAL VISION

CH2MHILL

111008

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE CARLSBAD ENERGY CENTER PROJECT

Docket No. 07-FAC-6
PROOF OF SERVICE
(Revised 1/12/2009)

Applicant's Comments on the Preliminary Staff Assessment

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-6
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT
David Lloyd
Carlsbad Energy Center, LLC
1817 Aston Avenue, Suite 104
Carlsbad, CA 92008
David.Lloyd@nrgenergy.com

Tim Hemig, Vice President
Carlsbad Energy Center, LLC
1817 Aston Avenue, Suite 104
Carlsbad, CA 92008
Tim.Hemig@nrgenergy.com

APPLICANT'S CONSULTANTS
Robert Mason, Project Manager
CH2M Hill, Inc.
6 Hutton Centre Drive, Ste. 700
Santa Ana, CA 92707
Robert.Mason@ch2m.com

Mgan Sebra
CH2M Hill, Inc.
2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833
Megan.Sebra@ch2m.com

COUNSEL FOR APPLICANT
John A. McKinsey
Stoel Rives LLP
980 Ninth Street, Ste. 1900
Sacramento, CA 95814
jamckinsey@stoel.com

INTERESTED AGENCIES
California ISO
P.O. Box 639014
Folsom, CA 95763-9014
(*e-mail preferred*) e-recipient@caiso.com

INTERVENORS
City of Carlsbad
Allan J. Thompson
Attorney for City
21 "C" Orinda Way #314
Orinda, CA 94563
allanori@comcast.net

City of Carlsbad
Joseph Garuba, Municipals Project Manager
Ron Ball, Esq., City Attorney
1200 Carlsbad Village Drive
Carlsbad, CA 92008
jgaru@ci.carlsbad.ca.us; rball@ci.carlsbad.ca.us

Terramar Association
Kerry Siekmann & Catherine Millr
5239 El ARbol
Carlsbad, CA 92008
siekmann1@att.net

California Unions for Reliable Energy ("CURE")
Gloria D. Smith & Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
gsmith@adamsbroadwell.com

INTERVENORS

Center for Biological Diversity
c/o William B. Rostove
EARTHJUSTICE
426 17th St., 5th Floor
Oakland, CA 94612
wrostov@earthjustice.org

Power of Vision
Julie Baker and Arnold Roe, Ph.D.
P.O. Box 131302
Carlsbad, CA 92013
powerofvision@roadrunner.com

Rob Simpson
Environmental Consultant
27126 Grandview Avenue
Hayward, CA 94542
rob@redwoodrob.com

ENERGY COMMISSION

JAMES D. BOYD
Vice Chair and Presiding Member
jboyd@energy.state.ca.us

KAREN DOUGLAS
Commissioner and Associate Member
kldouglas@energy.state.ca.us

Paul Kramer
Hearing Office
pkramer@energy.state.ca.us

Mike Monasmith
Siting Project Manager
mmonasmi@energy.state.ca.us

Dick Ratliff
Staff Counsel
dratliff@energy.state.ca.us

Elena Miller
Public Adviser's Office
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Elizabeth Hecox, declare that on January 30, 2009, I deposited copies of the aforementioned document in the United State mail at 980 Ninth Street, Suite 1900, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Elizabeth Hecox